Abstract of the Disclosure

A remote sensing device for determining at least one characteristic of a vehicle emission plume includes a radiation source, a detector, and a plurality of filters. Either the filters or the detector are movable relative to the other such that different filters, each of which is capable of filtering out radiation except radiation of a predetermined wavelength band, can be used to filter the radiation directed to the detector. Also disclosed is a method for remotely determining at least one characteristic of a vehicle emission plume using a single detector and a plurality of filters wherein either the detector or the filters are positionable relative to one another.